United States Joint Forces Command
Joint Experimentation Directorate
Presentation
-- Fact Sheet --
Limited Objective Experiment (LOE)

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What was the Presentation LOE?

The Presentation Limited Objective Experiment (LOE) was a small-scale experiment designed to explore the presentation element of the Joint Futures Lab's (JFL) Common Relevant Operational Picture (CROP) concept. This LOE was a partnership between US Joint Forces Command (USJFCOM), the Assistant Secretary of Defense for Command, Control, Communications and Intelligence (ASD-C3I), the C4ISR Cooperative Research Program (CCRP), and the Joint C4ISR Battle Center (JBC).

The experiment examined three different ways to present information to decision-makers and measured the changes in individual and group situational awareness of a representative headquarters cell.

The Presentation LOE was conducted 20-31 August 2001.

Why do it?

The Presentation LOE was part of the Information Superiority (IS) concept experimentation strategy to define and refine IS concepts such as the Common Relevant Operational Picture (CROP) and Joint Interactive Planning (JIP). Joint and Service experiments to date have shed little light on how best to present synthesized information to the decision maker at the *operational level*. Most efforts aim at the tactical level. This LOE served a useful role in filling a knowledge management void at a critical level, reduced risk for Millennium Challenge 2002 (MC02), and refined the presentation element of the CROP concept and the collaboration element of the JIP concept.

What was the experiment objective?

The objective of the experiment was to de g
members of a command and control headqu ods
of visualization of information and collaborat

How was it conducted?

Participants were tasked with monitoring a developing crisis situation and conducting course-of-action planning. Individual and shared situational awareness were the primary metrics to support the LOE statistical analysis. The Headquarters Effectiveness Assessment Tool (HEAT) was used to analyze the experiment data.

Participants included: US Joint Forces Command (USJFCOM), the Assistant Secretary of Defense for Command, Control, Communications and Intelligence (ASD-C3I), the C4ISR Cooperative Research Program (CCRP), and the Joint C4ISR Battle Center (JBC).

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Fact sheet continued: Presentation LOE

Three presentation configurations were examined during the LOE:

1) The baseline or "as is" C4I configuration consisted of a tool suite that replicated the existing Defense Collaboration Tool Suite (DCTS). This was the same C4I configuration that was used during Unified Vision 2001. The DCTS provided a visualization and collaboration treatment that included collected, processed, and disseminated Global Command and Control System (GCCS) Common Operation Picture (COP) information for a small staff to conduct planning and to present briefs to the commander to aid decision making.

2) The Joint C4I Battle Center (JBC) Command Center Decision Aids (CCDA) configuration was replicated using the Advanced Deep Operations Cell Command and Control System (ADOCS) and the addition of the Theater Assessment Profiling System-Valuated State Space (TAPS-VSS) to provide both an integrated set of tools for mission planning, coordination, and execution for the COP and a web based decision support system for effects-based operations. The presentation allowed operators the ability to manipulate the COP display and to show indications of the conditions and trends of commander's critical information requirements.

3) The final configuration used a model of the DARPA Command Post of the Future (CPOF) Program visualization application. This model presented the operator with an interactive pattern recognition scheme that represented the COP of the future.

What's next?

New Presentation LOE technologies and proof of concepts were used during Unified Vision 2001(UV01), a major joint experiment held in May 2001. The Presentation LOE continued the experiment strategy and was the first LOE following UV01. It was also the lead experiment in a series of LOEs and spirals preparing the path to MC02. Technologies and concepts examined during the Presentation LOE will be examined in a more robust environment during MC02. The Presentation technology remains in the test bays dedicated to MC02 for integration testing, TTP development and concept of operations refinement. This will allow experiments to examine the utility of a command center decision aid initiative that could form the core technology for support to the Experimental Joint Force Command & Control Element.

Preliminary findings:

ADOCS

- Nice, clear and decluttered operational picture
- Good ability to zoom in and out of the operational picture
- Good ability to view terrain imagery in 3D
- Greater utility than C2PC and XIS for CROP visualization
- Planning, coordination and execution tools not examined

TAPS/VSS

- Good at portraying relationships and changes in conditions
- Simple Web based updates by components and staff
- Not intuitive to all participants
- Requires early coordination and extensive tailoring for Operational CDR and Staff
- Senior Concept Developers felt the system had great potential for analysis support

ADOCS and TAPS-VSS have been selected as a core set of command center decision aid tools planned for use during Millennium Challenge 2002.